

Thyroid Examination

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د. سیف ظریف

Thyroid examination

Order of examiner:-

Examine the thyroid swelling:- you should examine thyroid only , then tell examiner you want to complete your examination by (L.N , JVP, trachea, and do general examination to assess toxicity).

Look at this patient's neck:- you should examine all structure of neck .

Do general examination for this PT:- please don't miss the neck as part of general examination.

Preparation of examination:-

- ❖ Stand on the Right side of bed.
- ❖ Introduce yourself.
- ❖ Permission taken.
- ❖ Good position for PT:- setting position with neck slight extended.
- ❖ Good exposure:- all neck exposed laterally and below to supraclavicular fossa.

N.B:-

Pizillo method:- if PT with short neck ask him to elevate both his hands behind his head. (Tell examiner before if you like to do it).

Inspection:-

Look carefully for swelling and describe it as following:-

- ✓ **Number:-** single (thyroid) or multiple (L.N)
- ✓ **Site:-** in anterior triangle of neck = in front of neck = in midline of neck .
- ✓ **Size:-** measure about ...bycm in diameter.
- ✓ **Shape:-** if diffuse (butterfly) if localized (oval, round) ⇒ more extend to right side or left side of neck.
- ✓ **Surface:-** nodular or smooth (regular or irregular)
- ✓ **Skin over mass:-** look for
 - 1 - superficial veins:-** may occur 2nd to comparison of thyroid swelling on SVC
 - 2 - Scar:-** indicate previous surgery or biopsy ⇒ if present look for sign of hypocalcaemia (chvosteks and trousseaus signs).
 - 3 - Sinus (fistula):-** its occur in top of infected thyroglossal cyst.
 - 4 - Skin discoloration (redness)** signifies inflammation.
- ✓ **Special test:-**
 - 1- Ask PT to swallow with neck extension & look if move up and down if move it may:-**
 - Thyroid swelling or thyroglossal cyst (common).
 - Pre-tracheal L.N, subhyoid bursa, extrinsic carcinoma of larynx.

2- Pemberton's sign:- on raising the arms above the head, patients with retro-sternal goiter may develop signs of compression, (flushing then congestion of the face may end with syncope). (Don't do it in exam, just tell examiner)

✱ **Look for other mass in neck as L.N which may enlarge 2nd to metastases or infection.**

✱ **Tell examiner I would like to examine JVP,** if its elevated may 2nd to:-

comparison or heart failure due to thyrotoxicosis.

✱ **Comment by inspection**

e.g.:- there is single symmetrical swelling in anterior triangle of neck measures about 4 by 6cm in diameter butterfly in appearance with smooth surface and I can't determine any abnormality in skin over mass this mass is move up and down with swallowing and I can't recognize other mass in neck.

Palpation:- ask PT if he has pain over neck at which site before you start.

1- From front: - temp, tenderness. (But Main and ideal palpation from back).

2- From back:- first be ensure PT have glass of water in his hand then put neck of PT in natural position to relax muscle of neck, **(Please examine each lobe alone, don't move both hands at same time).**

✱ **-Number, site, size [measure it with tape measure], shape, surface, consistency, skin attachment & sternomastoid attachment** [by asking the patient to push his head against your hand then feel for the other side], lower border if you can get below it or no, by palpating the tracheal ring.

3- Palpate trachea:- central or not .the sensation of crepitus and stridor on pressure on lateral aspect of trachea suggest of tracheomalacia this test known as **(Kocher test)**

4- Palpate carotid: - is palpable or not. If not palpable with present of blood flow known as ⇒(berry sign) , occur in malignant extension .

5- Palpate cervical L.N:- sheet general examination.

Percussion: = do it over manubrium of sternum, note (do it in all cases even tracheal wring was palpable)

➤ Resonance note ⇒ normal.

➤ dullness ⇒ retrosternal goiter .

Auscultation: = for bruit over swelling which present in gravis disease

⇒(pathognomonic).

✱ **Assessment of thyroid function clinically: - (very imp)**

1- Vital sign (pulse, BP, TEMP and R.R).

2- Face (eye, tongue).

3- Upper limb (hand , reflex , proximal myopathy) .

4- Lower limb (edema, reflex, proximal myopathy).

hyperthyroidism	hypothyroidism
pulse	pulse
Tachycardia ($\uparrow$ H.R)	Bradycardia ($\downarrow$ H.R)
irregular irregular pulse if PT with (atrial fibrillation)	regular
collapsing pulse .	no
Temperature $\uparrow$	Temperature $\downarrow$
BP :- isolated systolic HTN	Increase in both.
R.R $\Rightarrow \uparrow$	R.R $\Rightarrow$ normal or ($\uparrow \Rightarrow$ in plural effusion) or Shallow and slow respiratory pattern.
face	face
staring look, nervousness,	Dry puffy skin , Thinning of the outer third of the eyebrows (sign of Hertoghe)
eye	eye
Lid lag, lid retraction, exophthalmos (proptosis), conjunctival congestion & chemosis, Extra-ocular movements impaired, later on papilledema.	Periorbital edema.
Tongue $\Rightarrow$	Tongue $\Rightarrow$
Tremor	relatively Large
Hand $\Rightarrow$	Hand $\Rightarrow$
1 = tremor, warm sweaty (common) 2 = Clubbing , palmer erythema (uncommon)	dry skin , (Thin & brittle fingernails)
Reflex $\Rightarrow$	Reflex $\Rightarrow$
hyperreflexia (ankle, biceps)	Delay of relaxation especially ankle.
Lower limb $\Rightarrow$	Lower limb $\Rightarrow$
edema 2nd to (H.F ,pretibial myxedema)	Non pitting edema also may occur.
Proximal myopathy $\Rightarrow$ +ve.	Proximal myopathy $\Rightarrow$ -ve

How would you grade the size of the goiter?

*WHO grading of goiter:

Grade 0: not palpable , not visible goiter.

Grade 1: 1A⇒ only Palpable goiter larger than terminal phalanges of examiner's thumb,
Goiter detectable only on PT palpation.

1B⇒ Goiter palpable and visible with neck extended only.

Grade 2:- Goiter visible with neck in normal position.

Grade 3:- Large goiter visible from a distance.

What are the causes of goiter?

Simple	Toxic
Physiological (pregnancy , puberty)	Graves' disease (diffuse) 1ry toxic.
Colloidal (2 nd to iodine deficiency)	Plummer disease (multi-nodular) 2 nd toxic.
Simple nodular goiter (multiple, solitary)	Single toxic nodule.
neoplasm	inflammatory
Adenoma, Carcinoma	Hashimoto thyroiditis
Lymphoma.	De-quervains thyroiditis
Metastasis	Riedl's thyroiditis (wood like)

What are sign occur in Graves' disease rather than other causes of thyrotoxicosis?

- 1- Bruit over gland by auscultation.
- 2- Exophthalmos / proptosis ⇒ **persistent even after treatment.**
- 3- Conjunctival congestion & chemosis.
- 4- Extra-ocular involvement (1ST to be affected inferior oblique muscle).
- 5- Pretibial myxedema ⇒ (bilateral pinkish brown dermal plaques).

Which is the best laboratory test to diagnose hyperthyroidism?

Serum TSH measurement is the single most reliable test to diagnose all common forms of hyperthyroidism, particularly in an outpatient setting.

What is the single best clinical indicator for hypothyroidism?

Delayed ankle jerks.

What is the best laboratory indicator for hypothyroidism?

Elevated serum TSH levels. When there is a suspicion of pituitary or hypothalamic disease, the serum free T₄ concentration should be measured in addition to serum TSH levels. Serum T₃ concentrations are a poor indicator of hypo-thyroid state and should not be used.

What drugs are used in the treatment of thyrotoxicosis?

- ❖ Carbimazole.
- ❖ Methimazole.
- ❖ Propylthiouracil.

What is euthyroid Graves' disease?

The patient will be clinically and biochemically euthyroid but will have manifestations of Graves' ophthalmopathy.

How would you investigate a simple goitre?

Estimation of serum T₃, T₄, TSH and thyroid antibodies.